

Work Order ID 57402



April 6, 2010 2:23:24 PM

Item ID: D4010-1

Accept



Setup Start



Revision ID:

Stop



Item Name: Bearpaw

Start Date: 4/06/10

Start Qty: 12.00



Cust Item ID:

Required Date: 4/09/10

Req'd Qty: 12.00



Customer:

Reference:

Approvals:

Process Plan: U

Date: _____

Tooling: _____

Date: _____

Run Start



QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr

Revision Nbr

D4010

C

100

0.00



HAND FINISHING THERMOFORMING

Thermoform

Memo

0.00

Thermoforming Machine

Cut Blanks to fit frame size

BB
10/04/08
(X12)

105

0.00



HandThermo

Memo

0.00

Hand Finishing Thermoforming

Dry Sheet as per QSI022 ALEXTRA

Temp: 250°

Time IN: 8:00 PM April 10 / 2010

Time OUT: 7:00 AM April 12 / 2010

BB
10/04/12
(X12)

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QC:

Date:

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Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

110

0.00



THERMOFORMING MACHINE

Thermoform

Memo

0.00

Thermoforming Machine

Thermoform as per Dwg. D4010-1 and Folio FTA067 using tool DT 9540

Dwg. Rev. C

Folio Rev. 51

BB
10/04/12
(X12)

120

0.00



QC2- Inspect parts off machine FAI/FAIB

QC

Memo

0.00

Quality Control

Visually inspect for proper formation of each part

BB
10/04/12
(X12)

130

0.00



QC8- Inspect parts - second check

QC

Memo

0.00

Quality Control

SL
10/04/12
(X12)

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Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

140

0.00



HAND FINISHING THERMOFORMING

Thermoform

Memo

0.00

Thermoforming Machine

1-Trim & Drill to Finished Dimensions as per dwg D4010-1

2- Use wearplate jig DT9542 to transfer drill holes in bearpaw as per dwg and use 0.375" unibite to open holes to finish size.

3- ~~Deburr~~ CHAMFER HOLES USING 8 FLUTE COUNTERSINK BIT W/L 10/04/14.

LL 10/04/14
BB 10/04/14 X12

PTO →

145

0.00



HandThermo

Memo

0.00

Hand Finishing Thermoforming

Anneal trimmed & drilled product at 250 deg. F. for 75 minutes & allow to cool in oven.

Time In: 3:30 PM 10/04/14 BB

Oven Off: 6:30 AM 10/04/15 BB X12

BB 10/04/15
X12

ROUTE CHANGE

10/04/14
STEP 140

#1 CHANGE TIGNS TO READ
CHAMFER HAS USW. & ROUTE COUNTERS IN BIT

Permanent change on Routing Card

10/04/14
(X12)

#2. Use washer to transfer drill holes on pin along 4010-041
Use 0-Route counter sink to chamfer outside of holes for wearbars.
(X12)

NO CHANGE TO ROUTINES. (For this ISO only) 10/04/14
11
See ~~LAST~~ PAGE
NEXT

W/O: 57402		PERMANENT CHANGE WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	
10/04/14	140	Change item 3 to read. CHAMFER ALL HOLES USING O-FLUTE COUNTERSINK BIT. PERMANENT CHANGE ON ROUTING CARD.	Sh DL	10/04/14 10.04.14	12		S 10/04/15	
10/04/14	140	Use wear bar to transfer drill holes, as per drawing D4010-041 Use O-Flute countersink bit to chamfer outside holes. No ROUTING CHANGE (FOR THIS WO only)	DL	10/04/14	12		S 10/04/15	

Part No: D4010-1 PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Start Qty: 12.00

Required Date: 4/09/10

Req'd Qty: 12.00

Cust Item ID:

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run

Start

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

150

QC2- Inspect parts off machine FAI/FAIB

0.00



QC

Memo

0.00

Quality Control

Check dimensions to ensure conformity to drawing tolerances.

BB
10/04/15 (12)

160

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

8/10/04/15

(12)

170

Identify as per dwg & Stock Location: _____

0.00



Packaging

Memo

0.00

Packaging

10/04/15 (12)

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Cust Item ID:

Required Date: 4/09/10 Req'd Qty: 12.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

180

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

10/04/15 *[Signature]*
MF
10-4-15

Picklist Print

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Page 1

Work Order ID: 57402



Parent Item: D4010-1



Parent Item Name: Bearpaw

Start Date: 4/06/10

Required Date: 4/09/10

Comments: IPP RevA: New issue DD verified by:EC
IPP Rev B. Improved process Add Step 105 (Drying) & 145 (Annealling) to
 routings 10/03/31 DL

Start Qty: 12.00

Required Qty: 12.00

Component Item ID/	Replacement	Mfg/	Bin	Primary	Last	Route	Unit of	Qty on	Remaining	Qty	Date	Status
M-ALXTRAB-S.300		Purchased	No			100	sf	623.9800	89.7347			



Alextra ET 0.300 sheet



Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

therm

623.98

113108

623.98

BB
10/04/12
X12

DART AEROSPACE LTD	Work Order:	57402
Description: Bear Pad 407	Part Number:	D-4010-1
Inspection Dwg: D-4010 Rev: C		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

THERMOFORMING SECTION

Description	Accept	Reject	Method of Inspection	Comments
Inside Radii less than _____"	N/A			
Shape Definition	✓			
Texture Retention	✓			
Material imperfections such as bumps, cracks, voids, scratching	✓			

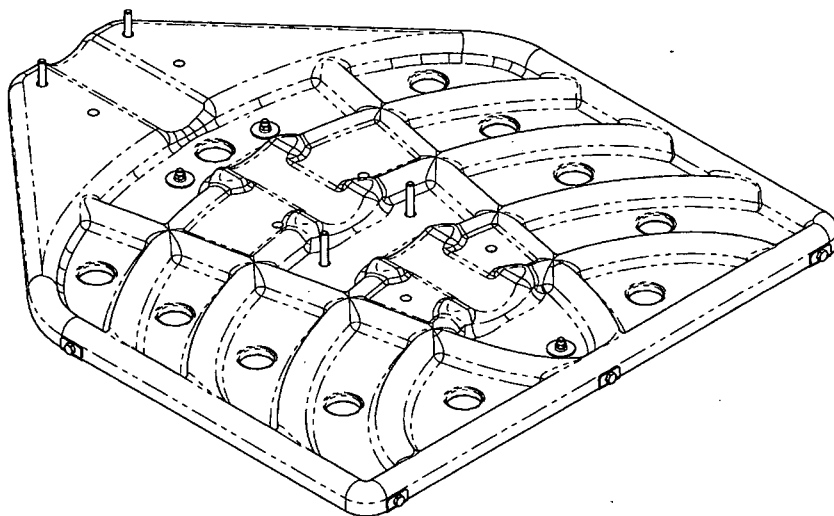
Measured by: DL	Date: 10/04/08
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TRIMMING SECTION

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
12.00"	± 0.25	11.825"	✓			
5.50"	± 0.30	5.5	✓			
9.50"	± 0.30	9.5	✓			
11.81"	± 0.30	11.825	✓			
16.69"	± 0.30	16.7	✓			
20.94"	± 0.30	20.9	✓			
23.25"	± 0.30	23.25	✓			
24.66"	± 0.25	24.5	✓			
2.34"	± 0.25	2.25	✓			
1.00"	± 0.100	0.980	✓			
1.25"	± 0.13	1.36	✓			
0.375"	± 0.006	0.374	✓			

Measured by: DL	Date: 10/04/14
Audited by: BB	Date: 10/04/14
Prototype Approval:	Date:

Rev	Date	Change	Revised by	Approved
A		New Issue	KJ/DL	



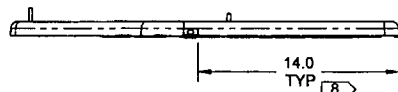
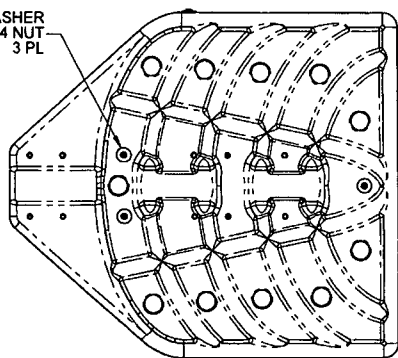
D4010-041 BEARPAW ASSEMBLY (407)

*also
57402*

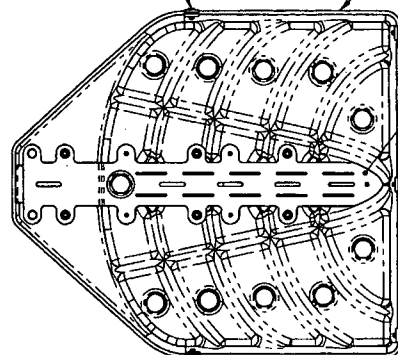
RELEASED
2009-11-26
MB

C	OPTIMIZED DESIGN BASED ON FUNCTIONALITY AND TO EASE MANUFACTURING	MB	09.11.10
B	REDESIGNED, ADDED PROVISIONS FOR COMPATIBILITY WITH OEM SKIDTUBES/SADDLES, REDEFINED SOME TOLERANCE	MB	09.11.02
A	NEW ISSUE	MB	09.10.22
REV.	DESCRIPTION	BY	DATE
DESIGN	<i>LA</i>		
DRAWN	<i>LA</i>		
CHECKED	<i>ASS</i>		
MFG. APPR.	<i>LA</i>		
APPROVED	<i>LA</i>		
DE APPR.	<i>LA</i>		
DATE	09.11.10		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA DRAWING NO. D4010 REV. C SHEET 1 OF 3 TITLE BEARPAW (407) SCALE NTS <small>COPYRIGHT © 2009 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>			

D3456-1 WASHER
MS21043-4 NUT
3 PL



AN3C5A BOLT
D4015-041 WEARBAR
MS21043-3 NUT



AN3C5A BOLT
D4015-041 WEARBAR
MS21043-3 NUT

D4010-041 BEARPAW ASSEMBLY (407)

D4010-1
BEARPAW

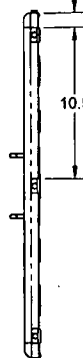
AN3C5A BOLT
D4015-041 WEARBAR
MS21043-3 NUT

D4013-041 WEARPLATE
ASSEMBLY

AN3C5A BOLT
D4015-041 WEARBAR
MS21043-3 NUT

AN3C5A BOLT
D4015-041 WEARBAR
MS21043-3 NUT

1.0
TYP



10.5

14.0
TYP

ITEM	QTY -041	P/N	DESCRIPTION
1	X	D4010-041	BEARPAW ASSEMBLY (407)
3	3	D3456-1	WASHER
4	1	D4010-1	BEARPAW
5	1	D4013-041	WEARPLATE ASSEMBLY
6	5	D4015-041	WEARBAR
21	5	AN3C5A	BOLT
22	5	MS21043-3	NUT
23	3	MS21043-4	NUT

W/257402

RELEASED
2009-11-24

D4010-041 NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 9.41 lbs
- 8) LOCATE D4015-041 (ITEM 5) AS SHOWN AND TRANSFER DRILL Ø0.191" HOLE FROM D4015-041 TO D4010-1 BEARPAW AND FASTEN USING PRESCRIBED HARDWARE.
- 9) TORQUE: AN3 NUTS = 15-20 in-lb
AN4 NUTS = 50-70 in-lb

DESIGN	1/4	DART AEROSPACE LTD	
DRAWN	1/4	HAWKESBURY, ONTARIO, CANADA	
CHECKED	1/5	DRAWING NO.	REV. C
MFG. APPR.	1/5	D4010	SHEET 2 OF 3
APPROVED	1/5	TITLE	SCALE
DE APPR.	1/5	BEARPAW (407)	NTS
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